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SIREN LACERTINA (AMPHIBIA: CAUDATA) IN NORTHEASTERN MEXICO AND SOUTHERN TEXAS

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Abstract

Our study of the external morphology and reproductive condition of some of the paratypes of *Siren intermedia texana* (USNM), as well as other Texas specimens, prompts us to conclude that two distinct species occur in Texas, *S. intermedia* and *S. lacertina. Siren intermedia texana* is placed in the synonymy of *S. i. nettingi.* The presence of *Siren lacertina* is confirmed for southern Texas and Matamoros, Tamaulipas, Mexico.

Resumen

La revisión de algunas de las características morfológicas externas y la condición reproductiva de algunos de los paratipos de *Siren intermedia texana,* depositados en el USNM, nos permite concluir que hay dos especies distintas en Texas, *S. intermedia* y *S. lacertina. Siren intermedia texana* se ubica como sinónimo de *S. i. nettingi.* Se confirma la presencia de *S. lacertina* para el sur de Texas y Matamoros, Tamaulipas, México.

Introduction

During a study of the salamanders of the genus *Siren* (Brandon and Flores Villela, in prep.), we examined eight female specimens from the United States National Museum of Natural History collection that included five paratypes of *Siren intermedia texana* Goin, 1957 (USNM 4048—3 specimens, USNM 10853, USNM 10855) and three additional specimens (USNM 78484–78486). The snout–vent lengths (SVL) of these females and the condition of their gonads characterize two size classes (Table 1); two sexually mature females are more than 350 mm SVL, and six females (at least two sexually mature) are less than 260 mm SVL. Clearly these specimens represent two different species. The six smaller specimens (USNM 4048-2, 4048-3, 10855, 78484–78486) are *Siren intermedia*; the two larger ones (USNM 4048-1, 10853) are *S. lacertina.* Both species are represented among the paratypes of *S. intermedia texana* (Table 1).

Discussion

Noble and Marshall (1932:5) provided data on three *Siren* from Maverick County, Texas (USNM 10853, 10857, and 10861), recognizing the first two specimens as *S. lacertina* and the last as *S. intermedia.* Noble and Marshall (1932) recognized two species of *Siren* from localities west of the Mississippi Valley, one reaching sexual maturity at 195–272 mm SVL (*intermedia*), and the other sexually

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Table 1.—*Data for female* Siren *from southern Texas and Mexico (M = mature, I = immature; P = paratype of* S. i. texana*).*

USNM no.	SVL	Costal grooves	Mean egg size	Reproductive condition	Species	Locality
4048-1 P	363	37	2.3	M	*lacertina*	Tamaulipas, Mexico
4048-3 P	135	37	0.44	I	*intermedia*	Tamaulipas, Mexico
4048-2 P	185	35	0.4	I	*intermedia*	Tamaulipas, Mexico
10853 P	279*	35–36	2.2	M	*lacertina*	Upson, Maverick Co., Texas
10855 P	119	?	0.26	I	*intermedia*	Cameron Co., Texas
78484	139	35	0.98	M	*intermedia*	Victoria, Texas
78484	112	32	0.3	I	*intermedia*	Victoria, Texas
78486	161	35	0.48	M	*intermedia*	Victoria, Texas

* Our measurement of this specimen differs from that of Noble and Marshall (1932:5).

mature at over 400 mm SVL (*lacertina*). Also, the number of costal grooves of the smaller species is 31–35, rarely 36, and the number of costal grooves in the larger species is 36–39. Finally, egg diameter in *S. intermedia* is no more than 2.5 mm, and in *S. lacertina* it reaches 3 mm. These differential characters were not based exclusively on Texas material.

These characters also separate the USNM specimens from southern Texas and Mexico into two groups. Thus we conclude that two species, *S. intermedia* and *S. lacertina,* occur together in the Rio Grande Valley of southern Texas and northern Mexico. Brown (1950) tentatively assigned the large *Siren* of the Rio Grande Valley to *S. lacertina.* The distribution of *S. lacertina* in the Rio Grande drainage extends from Brownsville, Texas, and Matamoros, Mexico, upstream to Maverick County, Texas. The only Texas records are from Cameron, Duval, Maverick, and Victoria counties (Brown, 1950). Specimens of *Siren lacertina* that we examined from this area include, in addition to the specimens mentioned above, the following: USNM 52278 (Ft. Brown, Brownsville, Texas); UIMNH 13092 (Harlingen, Cameron Co., Texas); FMNH 6812 (Brownsville, Texas); MCZ 30594 (Maverick Co., Texas).

The diagnostic characters stressed by Goin (1957) in describing *S. intermedia texana* are as follows: 36–38 costal grooves, maximum SVL 686 mm, tail pointed, and a pattern of tiny black flecks on a dorsal ground color of gray and brownish gray. This subspecies was distinguished by Goin (1957) from *S. i. intermedia* and *S. i. nettingi* by higher costal groove count, larger size, and different coloration. The first two diagnostic characters (higher costal groove count and larger size) result from the inadvertent inclusion of specimens of *S. lacertina* in the type series. The shape of the tail tip (rounded vs. pointed) is variable and difficult to interpret. The other diagnostic characters of the subspecies *S. i. texana* are mainly differences in coloration, which also confused Goin owing to the mixture of *S. intermedia* and *S. lacertina* in the type series (*see* Martof, 1973:2). Thus *Siren lacertina* ranges from 500–750 mm SVL, and has 36–40, usually 38, costal grooves. There are no published data on egg size for Texas specimens. In the description of *S. intermedia texana,* Goin (1957) stated that the holotype (TCWC 10567, 7 mi N Brownsville, Cameron Co., Texas) was an adult female with 37 costal grooves. Our examination of the holotype revealed that the specimen is a mature male with 36 costal grooves. Due to the size of this specimen (SVL 271 mm; Goin, 1957, stated that it measured 281 mm), and low costal groove count, we conclude that it belongs to the smaller-sized species of *Siren* (*intermedia*). In the

absence of characters that unequivocally diagnose *S. i. texana,* we place that taxon in the synonymy of *S. i. nettingi.*

We cannot find differences that separate specimens of *S. lacertina* from southern Texas and Mexico from other *S. lacertina* from eastern United States, although this species is absent from localities west of Alabama (Conant and Collins, 1991). We tentatively assign the larger specimens from the localities mentioned above to the species *S. lacertina,* despite the hiatus in distributional range.

We further conclude that *S. intermedia nettingi* and *S. lacertina* occur in sympatry in the southeastern part of Texas and adjacent Mexico, confirming the suggestion of Brown (1950:36). The addition of the latter species increases the salamander fauna of Mexico, as presently recognized, to 92 species (Flores Villela, 1991). However, it was long ago properly first recorded for Mexico at Matamoros, Tamaulipas (on the basis of the USNM specimens previously cited), by Yarrow (1883:143) and Cope (1889:226–229). *Siren intermedia nettingi* Goin is also restored to the list of the Mexican herpetofauna (as Goin, 1942, had it), replacing *S. i. texana.*

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